

## CLAIMS

What is claimed is:

1. A system that facilitates discovery and display of devices, comprising:
  - a detection component that dynamically identifies a multi-dimensional location of wireless devices of a network relative to a new wireless device; and
  - a display component that renders a multi-dimensional representation of respective locations of the devices.
2. The system of claim 1, the multi-dimensional location is a three-dimensional location.
3. The system of claim 1, the respective locations of the devices are displayed relative to the new device.
4. The system of claim 1, the respective locations of at least one of the devices and the new device are displayed on the new device relative to a fixed point.
5. The system of claim 1, the respective locations of the devices whether moving or stationary are displayed dynamically relative to the new device while the new device is moving.
6. The system of claim 1, the new device and one or more devices are moving such that the respective locations of the one or more moving devices are presented dynamically *via* the display component.
7. The system of claim 1, further comprising a filter that selects a subset of the devices the locations of which are presented by the display component.
8. The system of claim 1, further comprising a filter that facilitates presenting a subset of the devices in a selected volume of space.

9. The system of claim 1, further comprising a filter that filters out barrier materials interstitial to one or more of the devices and the new device such that the devices may be sensed and displayed.

10. The system of claim 1, further comprising a filter that accesses a lookup table of barrier material properties to facilitate sensing and presenting one or more of the devices that are located beyond the corresponding barrier materials.

11. The system of claim 1, further comprising a filter that selects a subset of the devices according to at least one of frequency bandwidth and wireless technology.

12. The system of claim 1, the detection component utilizes analytical results of radio wave characteristics to dynamically determine a location of walls, floors, and other barriers within a given space.

13. The system of claim 1, the devices include at least one of wireless input devices, wireless peripheral devices, and wireless network access points.

14. The system of claim 13, the input devices include at least one of a mouse and a keyboard.

15. The system of claim 1, the new device communicates in at least one of a 2.4 GHz and 5 GHz radio band.

16. The system of claim 1, the new device communicates according to at least one of an IEEE 802.11 standard, an ultrawideband regime, and a radio frequency identification regime.

17. The system of claim 1, the detection component automatically extends a sensing range to detect at least one of a predetermined type of the devices.

18. The system of claim 1, the detection component automatically extends a sensing range to detect a predetermined number of the devices.
19. The system of claim 1, further comprising a communication component that receives a map of device locations, which map is presented by the display component in the two- or three-dimensional representation.
20. The system of claim 1, the display component presents at least one of a graphical representation of the devices and a corresponding textual identifier.
21. A portable terminal device according to the system of claim 1.
22. A computer according to the system of claim 1.
23. The system of claim 1, further comprising a classifier that automatically determines which of the devices is available for use by a user of the new device, and which of the available devices to direct the user.
24. The system of claim 23, the classifier directs the user of the new device to the available devices by presenting the two- or three-dimensional representation to the user.
25. The system of claim 23, the classifier is a support vector machine.
26. The system of claim 23, the available devices include data ports.
27. The system of claim 1, the detection component conserves power by beginning at a low signal strength and automatically increasing the signal strength until the desired result is reached.

28. The system of claim 27, the result includes at least one of detecting a predetermined number of the devices, detecting a predetermined number of device types, and reaching a predetermined signal strength.

29. The system of claim 1, the display component facilitates assigning a graphical representation of a vector to a displayed representation of one of the devices, which vector indicates at least one of distance and direction of the device relative to the new device.

30. The system of claim 1, further comprising an input component that accommodates at least one of voice input, touch screen input, and input device signals.

31. A system that facilitates discovery and presentation of devices, comprising:

- a detection component that dynamically identifies three-dimensional location data of wireless devices of a network relative to a new wireless device;
- a filter component that filters the location data according to predetermined location criteria; and
- a presentation component that presents *via* the new device a two- or three-dimensional graphical representation of respective locations of the devices.

32. The system of claim 31, the respective locations of the devices are displayed relative to the new device, and include a floor identifier associated with the location of an identified device.

33. The system of claim 31, the presentation component includes at least one of audio and video capability.

34. The system of claim 31, the location criteria includes a predetermined volume of space.

35. The system of claim 31, the location criteria includes analyzing and processing barrier materials that interfere with detecting the devices.

36. The system of claim 31, the location criteria includes a fixed detection range based upon a given implementation.

37. The system of claim 31, further comprising a communication component that receives a map of device locations, which map is presented by the presentation component in the two- or three-dimensional representation.

38. A method of discovering and displaying devices, comprising:  
dynamically detecting a multi-dimensional location of a wireless device relative to a portable terminal; and  
presenting a multi-dimensional representation of the location of the device on the portable terminal.

39. The method of claim 38, the location of the device is displayed relative to the portable terminal.

40. The method of claim 38, further comprising dynamically displaying the multi-dimensional representation of the location of the device relative to the portable terminal when the portable terminal is moving.

41. The method of claim 38, further comprising dynamically displaying the multi-dimensional representation of the location of the device relative to the portable terminal when both the device and the portable terminal are moving.

42. The method of claim 38, further comprising filtering a plurality of detected remote wireless devices to select the device.

43. The method of claim 38, further comprising filtering a plurality of detected wireless devices to present only those devices in a selected volume of space.

44. The method of claim 38, further comprising filtering out barrier materials interstitial to the devices and the new device such that the devices may be sensed.

45. The method of claim 38, the device is one of a wireless input device, wireless peripheral device, and wireless network access point.

46. The method of claim 38, further comprising automatically extending a sensing range to detect the device.

47. The method of claim 38, further comprising automatically extending a sensing range to detect a predetermined number of the devices.

48. The method of claim 47, the multi-dimensional representation includes at least one of a graphic representative of the device, a text identifier associated with the device, and a location vector that corresponds to an approximate direction and distance of the device relative to the portable terminal.

49. The method of claim 38, further comprising proxying the portable terminal through a device location system such that the location of the wireless device is obtained and presented on the portable terminal.

50. The method of claim 38, further comprising generating at least one map in response to detecting the wireless device, the map presented on the portable terminal to show the location of the device.

51. The method of claim 50, the map is generated dynamically in at least one of a background and a foreground.

52. The method of claim 50, the map is presented while another map is being generated in the background.

53. A system that facilitates the discovery and display of devices, comprising:  
means for dynamically detecting a multi-dimensional physical location of a wireless device; and  
means for presenting on a portable terminal a multi-dimensional representation of the physical location of the device relative to the portable terminal.

54. A graphical user interface of a computer that facilitates the discovery and display of wireless devices, the interface comprising:  
an input component for processing management information, the management information is associated with at least one of configuring the computer according to configuration information and detecting the device locations; and  
a presentation component for presenting a 2-D or 3-D representation of the locations of one or more of the detected devices based upon the management information.

55. The interface of claim 54, the configuration information includes at least one of an implementation, device type, environment, sensing range mode, and filter criteria.

56. The interface of claim 54, the filter criteria comprises at least one of wireless technology and frequency bandwidth.

57. The interface of claim 54, further comprising a mapping feature that maps a representative location in space of a detected device relative to other detected devices.

58. The interface of claim 54, the presentation component provides a graphical representation of a location vector that indicates a direction and distance of the computer from a detected device.

59. The interface of claim 54, further comprising a mapping feature that automatically maps device location information according to predetermined spatial criteria.

60. The interface of claim 54, further comprising a graphical floor layout of individual device location graphics, wherein the floor layout and location graphics are selectable.

61. The interface of claim 54, the presentation component further comprises at least one of means for selecting a floor in the building and means for selecting one of the device locations.

62. The interface of claim 54, further comprising a graphical means to display a color and/or a pattern corresponding to user preference information.